

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended) ~~Signaling~~ A signaling system for automated location-dependent recognition of flood risks, ~~flood states being transmitted to a central unit (20) and location dependent flood probability values being determined, characterized comprising:~~

~~in that the~~ a central unit (20) comprises including a multi-dimensional lookup table (203) corresponding to a spatial high resolution grid (60/61) ~~based on decentralized measurements of flood risk factors of a specific geographic territory, territory~~ whereas the flood risk factors  $[(P)]$  being associated with the grid and indicating the averaged an average flood frequency and/or susceptibility to flooding within a grid cell (60/61), the flood risk factors being calculated based on flood zone data associated with the specific geographic territory, the flood zone data indicating in the specific geographic territory flood zones with defined return periods,

~~in that the system comprises distributed gauging stations (5/30/31/32), , whereas configured to determine river discharge parameters (T) are measurable by the distributed gauging stations (5/30/31/32),~~ within  $[[a]]$  an area of multiple grid  $[[cell]]$  cells of the grid (60/61) and ~~transmitted to~~ transmit the river discharge parameters over a network  $[(50)]$  to the central unit  $[(20)]$ , the river discharge parameters comprising at least values for a return period and/or as a measure of intensity of measured flood events,

~~in that the central unit (20) comprises~~ comprising a correlation-module (21) ~~generating~~ configured to generate an event-specific ~~averaged~~ average probabilistic water depth value  $[(H)]$  for  $[[an]]$  a flood event based on the linked flood risk factors and the river discharge values, and ~~associating to~~ associate the probabilistic water depth value  $[(H)]$  to with the corresponding grid cell (60/61), and

~~in that the system comprises an cell~~ a cell arbitrator module ~~(22) aceting~~ acting on at least ~~on~~ one grid-based composition module ~~[(23)]~~ according to the ~~avaraged~~ average probabilistic water depth values ~~[(H)]~~.

Claim 2 (Currently Amended) ~~System~~ A system according to claim 1, characterized in that the grid-based composition module ~~[(23)]~~ comprises at least an early warning system signaling flood risk in the appropriate cell ~~(60/61)~~.

Claim 3 (Currently Amended) ~~System~~ A system according to claim 1, characterized in that the grid-based composition module ~~[(23)]~~ comprises automated damage prediction systems and/or damage covering systems for land-based installations based upon at least the flood risk factors.

Claim 4 (Currently Amended) ~~System~~ A system according to one of the claims 1 to 3, characterized in that the grid-based composition module ~~[(23)]~~ comprises at least an optimization and/or control module for protection installation of technical and/or industrial facilities based upon at least the flood risk factors.

Claim 5 (Currently Amended) ~~System~~ A system according to ~~on of the claims 1 to 4,~~ characterized in that the system comprises claim 1, further comprising:

a linking module with at least one adaptable event factor providing ~~[(the)]~~ spatial and/or temporal correlations for the discharge measurements of different gauging stations ~~(5/30/31/32)~~.

Claim 6 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 5, characterized in that~~ claim 1, wherein the gauging stations (5/30/31/32), comprise at least a sensor and/or measuring fixture to ~~measure river water level parameters, based upon which river water level parameters~~ determine the river discharge parameters ~~are determined~~.

Claim 7 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 6, characterized in that the grid of~~ claim 1, wherein the gauging stations (5/30/31/32), measuring the river discharge parameters  $[(T)]$  are located in a low spatial resolution in relation to the grid (60/61) of the flood risk factors.

Claim 8 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 7, characterized in that the grid (60/61) of~~ claim 1, wherein the gauging stations (5/30/31/32), measuring the river discharge parameters  $[(T)]$  are set to a high temporal resolution.

Claim 9 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 8, characterized in that~~ claim 1, wherein the resolution of the grid (60/61) of the flood risk factors is given by cell sizes below  $10^4\text{m}^2$  10,000m<sup>2</sup>.

Claim 10 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 9, characterized in that~~ claim 1, wherein the flood risk factors  $[(P)]$  are derived based upon at least geomorphologic parameters.

Claim 11 (Currently Amended) ~~System~~ A system according to claim 10, ~~characterized in that~~ wherein the geomorphologic parameters comprise horizontal distance and/or elevation difference to the next river.

Claim 12 (Currently Amended) ~~System~~ A system according to ~~[[on]]~~ one of the claims 10 ~~[[or]]~~ and 11, ~~characterized in that~~ wherein the geomorphologic parameters comprise horizontal distance and/or elevation difference to the next drainage area.

Claim 13 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 12,~~ characterized in that claim 1, wherein the central unit ~~[[20]]~~ comprises an interpolation module deriving the flood risk factors ~~[[P]]~~ based upon a country-specific flood zone table depending on horizontal distance and/or elevation difference.

Claim 14 (Currently Amended) ~~System~~ A system according to claim 13, ~~characterized in that~~ wherein the country specific flood zone table comprises the First American 100-year flood zone table.

Claim 15 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 14,~~ characterized in that claim 1, wherein the correlation module comprises at least ~~[[four]]~~ five adaptable correlation parameters  $x_1, x_2, \dots, x_5$ , ~~whereas~~ and the adaptable parameters are correlated by

$$H = \max\left(\frac{x_1 P - x_2 + x_3 \ln(T)}{x_4 P + x_5}, 0\right).$$

Claim 16 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 15,~~ characterized in that claim 1, wherein vulnerability factors are determined based upon historical dataset of corresponding portfolios and a generalized insurance risk is automated derivable from the vulnerability factors.

Claim 17 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 16, characterized in that~~ claim 1, wherein the system comprises different correlation modules for flood cell zones along a ~~[[cost]]~~ coast located different height m a. s. l..

Claim 18 (Currently Amended) ~~System~~ A system according to claim to 17, ~~characterized in that~~ wherein the system comprises at least one specific correlation module ~~determining~~ determining flood cell zones along a ~~[[cost]]~~ coast located lower than 10 m a. s. l..

Claim 19 (Currently Amended) ~~System~~ A system according to one of ~~[[the]]~~ claims 17 ~~[[or]]~~ and 18, ~~characterized in that~~ wherein the determination of the flood cells along a ~~[[cost]]~~ coast are additionally based upon storm surge events.

Claim 20 (Currently Amended) ~~System~~ A system according to ~~one of the claims 17 to 19, characterized in that~~ claim 17, wherein the determination of the flood cells along a ~~[[cost]]~~ coast additionally comprises a Sea, Lake and Overland Surges from Hurricanes (SLOSH) method.

Claim 21 (Currently Amended) ~~System~~ A system according to ~~one of the claims 1 to 20, characterized in that~~ claim 1, wherein the system is ~~aceessable~~ accessible over a network ~~(51) by client nodes, (40/41/42), whereas~~ the system further comprises a billing module with a billing gateway interface for access to the central unit ~~[[ (20) ]]~~ first call ~~data~~ detail records of a client node being transmittable from the central unit ~~[[ (20) ]]~~ to the billing module.

Claim 22 (Currently Amended) ~~System~~ A system according to claim 21,  
~~characterized in that by means of~~ further comprising a proxy module ~~of the system for~~  
downloading second call detail records of the client node (40/41/42) ~~are downloadable from~~  
the central unit (20) ~~by means of the proxy module~~ at least the identity of the client node  
and/or duration of the access to the central unit ~~[(20)]~~ and/or service being able to be  
captured and able to be passed on to the billing module.

Claim 23 (Currently Amended) ~~System~~ A system according to claim 22,  
characterized in that by means of the billing module of the system TAP files corresponding to  
the obtained service are able to be generated, ~~[[an]]~~ and these are transmittable, together with  
billing instructions, to a clearing module, the billing instructions including at least user-  
specific and/or service-provider-specific billing data.

Claim 24 (Currently Amended) ~~Method~~ A method for automated location dependent  
recognition of flood risks, ~~flood states being measured and location dependent flood~~  
~~probability values being determined, characterized~~ comprising:

~~in that~~ generating a spatial high resolution grid (60/61) ~~is generated~~ for a specific  
geographic territory and flood risk factors, (P) ~~are associated with the grid (60/61), the flood~~  
risk factors being calculated based on flood zone data associated with the specific geographic  
territory and indicating the average flood frequency and/or susceptibility to flooding within a  
grid cell (60/61), the flood zone data indicating in the specific geographic territory flood  
zones with defined return periods;

~~in that~~ determining river discharge parameters (T) ~~are determined by measurments of~~  
distributed gauging stations, (5/30/31/32), ~~;~~, the river discharge parameters comprising at least

values for a return period ~~and/or as a measure of~~ intensity of ~~measured and/or stochastically generated events, flood events;~~ and

~~in that~~ linking the flood risk factors and the river discharge ~~values are linked~~ parameters by a correlation module to generate an event-specific averaged probabilistic water depth value  $[(H)]$  for  $[(an)]$  a flood event, the probabilistic water depth value being associated with the corresponding grid cell.

Claim 25 (Currently Amended) ~~Method~~ A method according to claim 24, ~~characterized in that a linking module comprises~~ wherein at least one adaptable event factor ~~providing the~~ provides spatial and/or temporal correlations for  $[(the)]$  discharge measurements of different gauging stations ~~(5/30/31/32),~~.

Claim 26 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 or 25,~~ characterized in that claim 24, wherein river water level parameters are measured by the gauging stations ~~(5/30/31/32),~~, based upon which river water level parameters ~~the river discharge parameters~~ are determined.

Claim 27 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 26,~~ characterized in that claim 24, wherein the river discharge parameters  $[(T)]$  are measured and/or determined in a low spatial resolution in relation to the grid ~~(60/61)~~ of the flood risk factors.

Claim 28 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 27,~~ characterized in that claim 24, wherein the river discharge parameters  $[(T)]$  are measured and/or determined in a high temporal resolution.

Claim 29 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 28, characterized in that~~ claim 24, wherein the resolution of the grid ~~(60/61)~~ is given by cell sizes below ~~10'000m<sup>2</sup>~~ 10,000m<sup>2</sup>.

Claim 30 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 29, characterized in that~~ claim 24, wherein the flood risk factors  $[(P)]$  are derived based upon at least geomorphologic parameters.

Claim 31 (Currently Amended) ~~Method~~ A method according to claim 30, ~~characterized in that~~ wherein the geomorphologic parameters comprise horizontal distance and/or elevation difference to the next river.

Claim 32 (Currently Amended) ~~Method~~ A method according to  $[[on]]$  one of the claims 30  $[[or]]$  and 31, ~~characterized in that~~ wherein the geomorphologic parameters comprise horizontal distance and/or elevation difference to the next drainage area.

Claim 33 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 32, characterized in that~~ claim 24, wherein the flood risk factors  $[(P)]$  are derived by an interpolation module based upon a country-specific flood zone table depending on horizontal distance and/or elevation difference.

Claim 34 (Currently Amended) ~~Method~~ A method according to claim 33, characterized in that the country specific flood zone table comprises the First American 100-year flood zone table.



Claim 35 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 34, characterized in that~~ claim 24, wherein the correlation module comprises at least ~~[[four]]~~ five adaptable correlation parameters  $x_1, x_2, \dots, x_5$ , ~~whereas~~ and the adaptable parameters are correlated by

$$H = \max \left( \frac{x_1 P - x_2 + x_3 \ln(T)}{x_4 P + x_5}, 0 \right).$$

Claim 36 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 35, characterized in that~~ claim 24, wherein vulnerability factors are determined based upon historical dataset of corresponding portfolios and a generalized insurance risk is automated derivable from the vulnerability factors.

Claim 37 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 24 to 36, characterized~~ claim 24, wherein different correlation modules are used for flood cell zones along a ~~[[cost]]~~ coast located different height m a. s. l..

Claim 38 (Currently Amended) ~~Method~~ A method according to claim to 37, ~~characterized in that~~ wherein flood cell zones along a ~~[[cost]]~~ coast located lower than 10 m a. s. l. are determined by a specific correlation module.

Claim 39 (Currently Amended) ~~Method~~ A method according to one of ~~[[the]]~~ claims 37 ~~[[or]]~~ and 38, ~~characterized in that~~ wherein the determination of the flood cells along a ~~[[cost]]~~ coast are additionally based upon storm surge events.

Claim 40 (Currently Amended) ~~Method~~ A method according to ~~one of the claims 37 to 39, characterized in that~~ claim 37, wherein the determination of the flood cells along a ~~coast~~ coast additionally comprises a Sea, Lake and Overland Surges from Hurricanes (SLOSH) method.

Claim 41 (Canceled).